



Massachusetts Bay Transportation Authority

MBTA Quarterly Safety Report

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October 15, 2018



Overview

- Regulatory Updates
- Workplace Safety Improvement Initiative
 - Accomplishments & In Progress
 - Facility Inspections
- Safety Data Review
 - Employee Injuries & Assaults
 - Derailments
 - Bus Collisions
 - Subway & Bus Fatalities
 - Commuter Rail Trespasser Strikes



Regulatory Updates

- FTA Final Rule – State Safety Oversight (49 CFR 674)
 - DPU Revised State Safety Program Standard (220 CMR 151)
 - Increased DPU authority; changed incident reporting thresholds
 - New regulation became effective November 28, 2017
 - MBTA-DPU Transition Team formed January 2018 and continues meeting monthly
- FTA Final Rule – Public Transportation Agency Safety Plan (49 CFR 673)
 - Replaces 49 CFR 659.19 System Safety Program Plan
 - Requires the MBTA to develop an Agency Safety Plan based on a Safety Management System approach
 - Rule is effective July 19, 2019 with an implementation deadline of July 19, 2020
- Department of Labor Standards (DLS) Oversight – February 2019





Workplace Safety Improvement Initiative

- Accomplished:
 - Occupational Health & Safety (OHS) Plan
 - In August, MBTA Safety released the following Safety Bulletins:
 - SB18-005 - Signs, Signals, and Barricades
 - SB18-006 - Respiratory Protection
 - SB18-007 - Fire Life Safety
 - SB18-008 - Lockout/Tagout
 - SB18-009 - Walking Working Surfaces
 - SB18-010 - Confined Spaces
 - SB18-011 - Welding, Cutting, and Brazing
 - SB18-012 - Fall Protection
 - SB18-013 - Scaffolding, Stairways, and Ladders
 - Facility Inspections: Round 2 inspections began in July
 - Facilities scoring below 80% compliance require additional follow up
 - OHS Steering Committee & Working Group
 - Facility OSHA gap analysis checklists completed
 - Safety Hotline Campaign
 - PPE poster designed & approved



Workplace Safety Improvement Initiative

- In process:
 - Safety Bulletin development is on schedule to be completed by December 31, 2018.
 - 13 additional safety bulletins in draft:
 - Working Conditions / Fitness for Duty
 - Chemical HazComm
 - Motor Vehicles, Mechanized Equipment, and Marine Operations
 - Noise Hazards & Hearing Protection
 - Bloodborne Pathogens
 - Excavations
 - Industrial Trucks
 - Tools – Hand and Power
 - Concrete and Masonry Construction
 - Demolition
 - Cranes & Derricks in Construction
 - Machine Guarding
 - Materials Handling





Facility Inspections

- North Cambridge Bus Garage
 - Installation of proper machine guarding





Facility Inspections

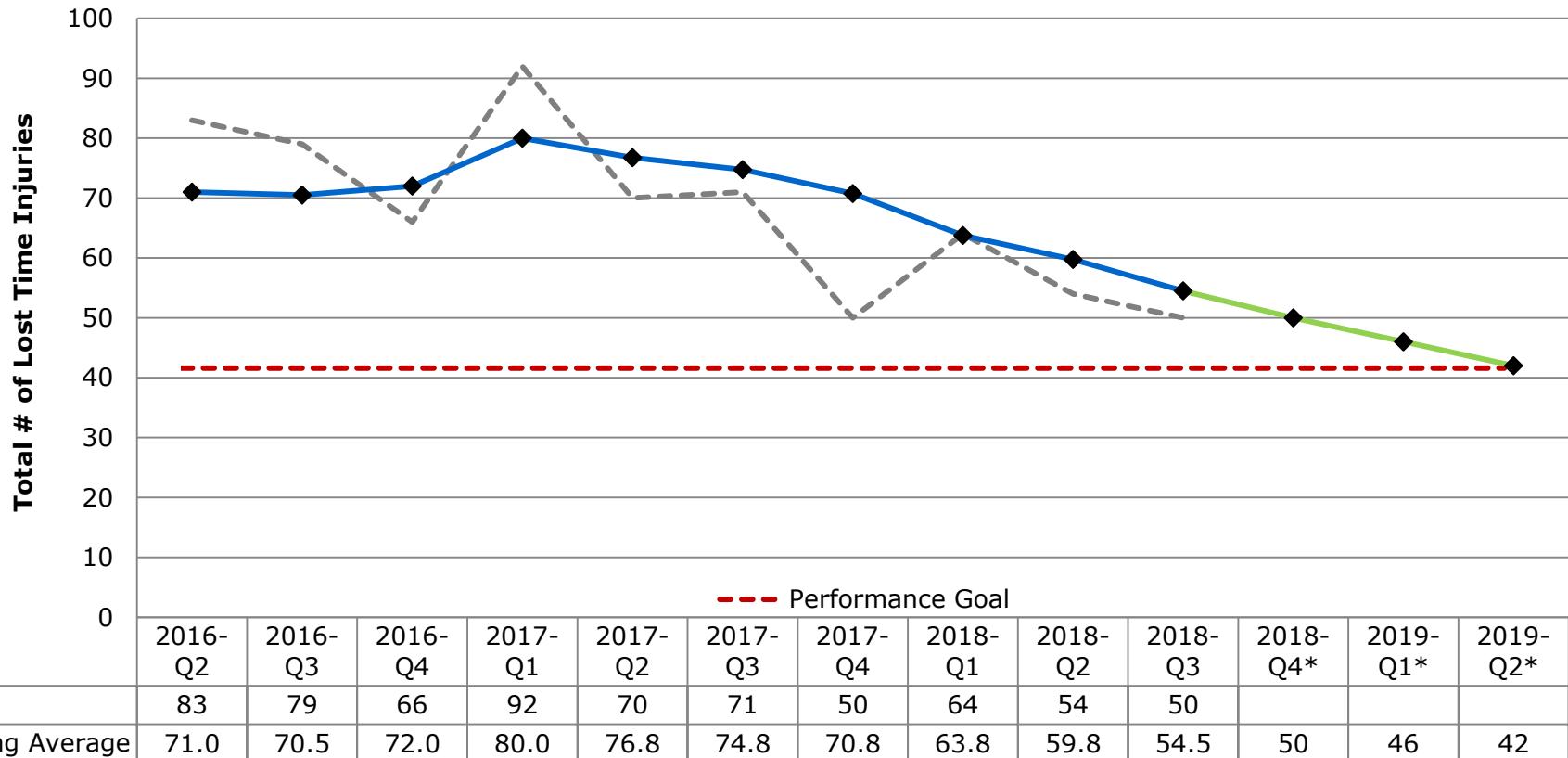
- North Cambridge Bus Garage
 - Tripping hazards removed and walkways cleared.





Employee Lost Time Injuries

Employee Lost Time Injuries



*Projection based on a continuation of the current downward trends.

Quarter 3 data is pending final verification with reporting departments and Worker's Comp.



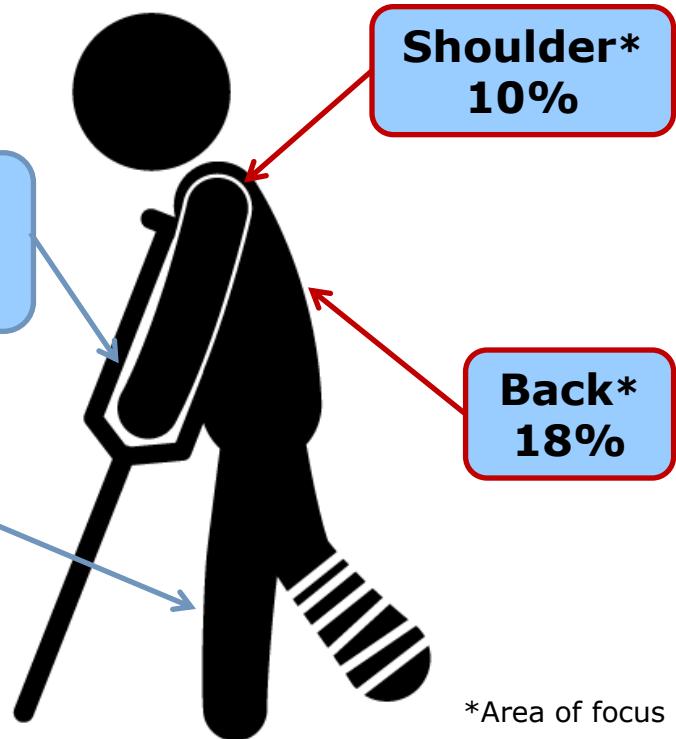
Employee Lost Time Injuries

- Quarterly Lost Time Injury Rate has steadily declined since Q1 2017.
- MBTA OSHA Recordable Incident Rate for Calendar Year 2017 was **7.45**.
 - Rate is based on the number of employees involved in a recordable injury or illness per 100 full time employees.
- The Bureau of Labor Statistics 2016 average rate for urban transit systems was **6.2**
- To achieve a rate below **6.2**, MBTA must achieve a year-over-year injury reduction of 20%.
- MBTA is moving toward this goal through:
 - Implementation of safety programs starting with safety bulletins
 - Improved injury reporting and investigation including the release of Safety Bulletin SB18-002 “Employee Injury Reporting”
 - Regular facility inspections
- MBTA Safety will continue to monitor with regular progress updates to management.



Employee Injuries

Most Common Lost Time Injured Body Part in Quarter 3 – 2018



Most Common Lost Time Injury Types in Quarter 3 - 2018

Injury Type	Total	%
Sprains / Strains	29	58%
Cut / Scratches	6	12%
Contusion / Bruise	2	4%

*Area of focus for reduction.

Quarter 3 data is pending final verification with reporting departments and Worker's Comp.



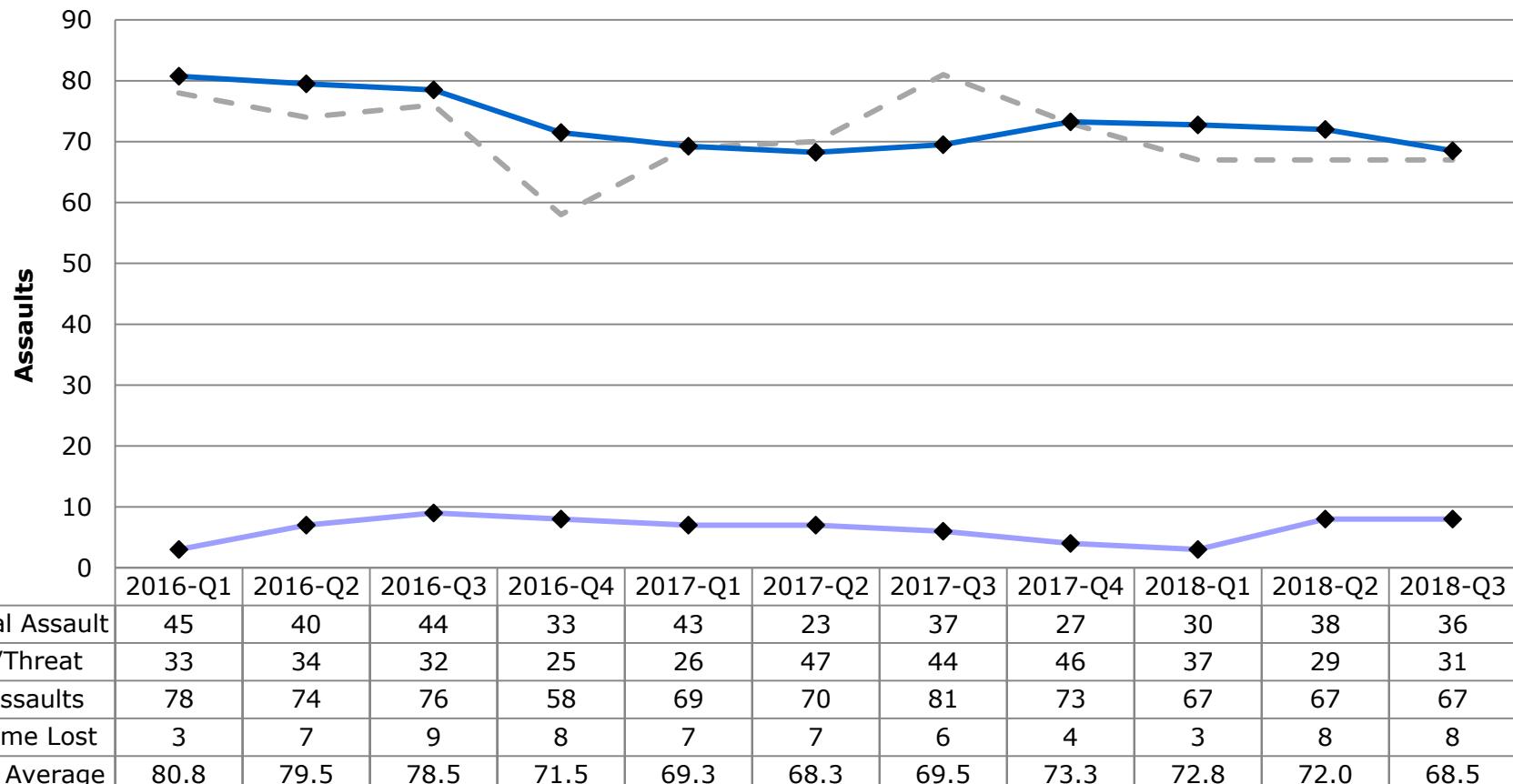
Employee Injuries

- Overall, the most commonly injured body parts resulting in lost time are the back and shoulder.
- Caused by improper lifting, bending, and reaching.
- Education on proper lifting technique is critical.
- MBTA is continuing to explore development of an authority-wide Lifting Awareness Campaign.
- Lower body injuries are also common and related to slip, trip, and fall incidents.
- In August, Safety Bulletins were released related to Walking Working Surfaces, Fall Protection, and Scaffolding, Stairways, & Ladders.
- MBTA Safety will continue to monitor these injury types to determine effectiveness of bulletin implementation.



Assaults on Employees

Assaults on Employees



*Totals based on a review of Operations Logs and injury reports submitted to MBTA Safety as of October 1, 2018



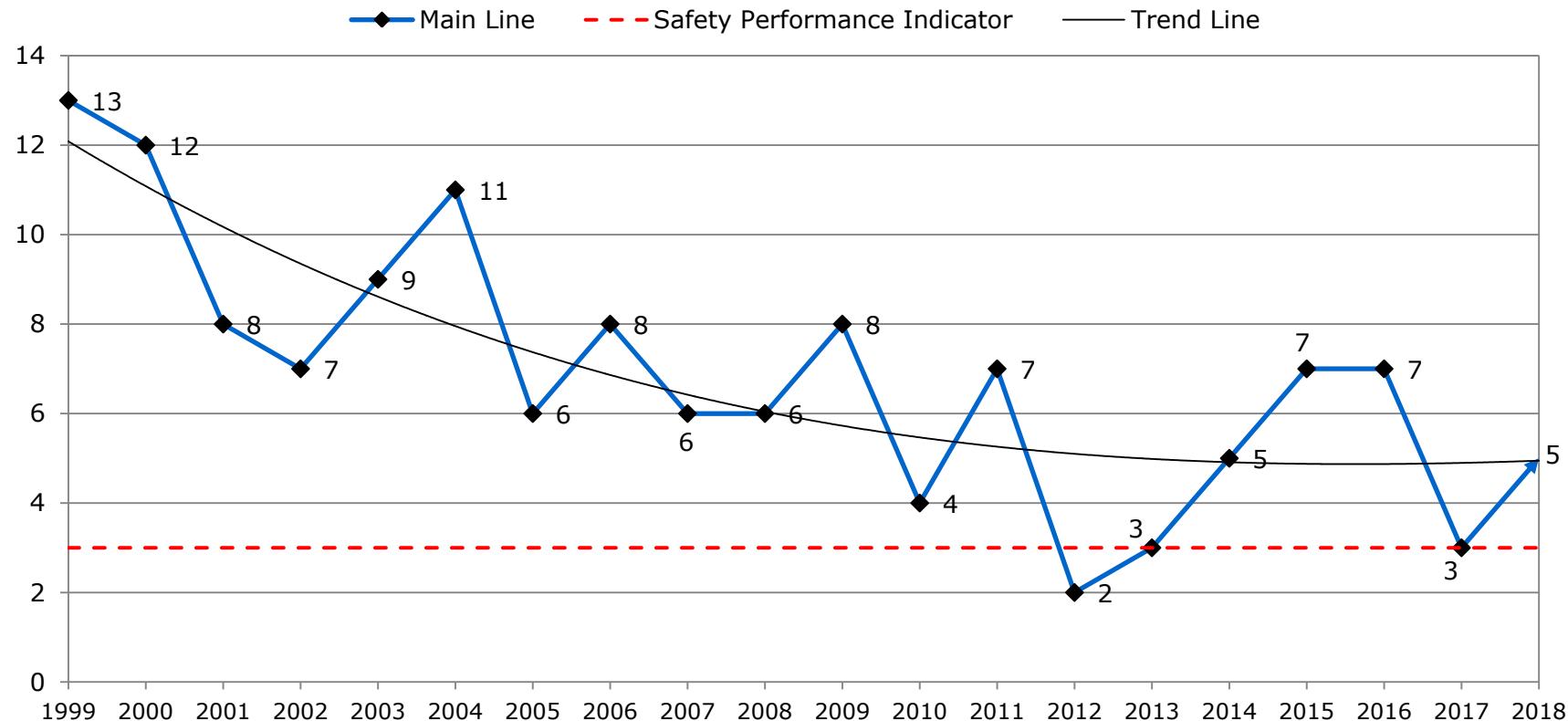
Assaults on Employees

- Central focus is on reducing bus operator assaults.
- In Quarter 4 of 2016, MBTA launched a system-wide anti-harassment campaign.
- Campaign resulted in a reduction of total assaults but rates have since returned to previous levels.
- MBTA is continuing to install driver barriers on board buses to protect operators.
- New York's MTA reported a 35% reduction in operator assaults in the first year after barriers were installed across their bus fleet.
- MBTA Safety is currently developing metrics to measure effectiveness of program.
- MBTA Safety is also tracking assaults on station Transit Ambassadors.



Derailments – Data Review

Main Line Derailments 1999-2018

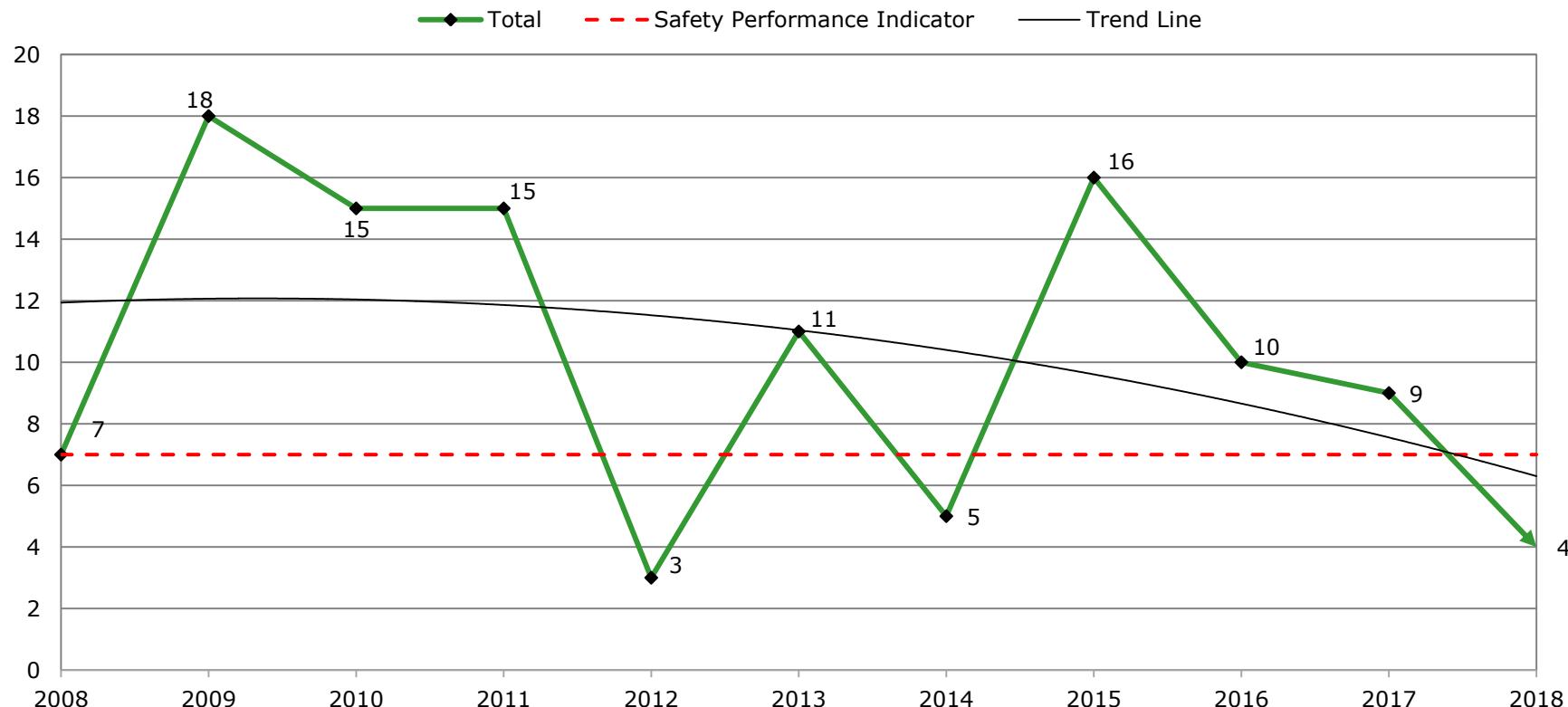


MBTA Safety has coordinated with Transportation Management to improve Investigation processes & procedures.



Derailments – Data Review

Yard Derailments 2008-2018



Derailment numbers above the Safety Performance Indicator goal signify a need for greater focus on the examination of causal factors and mitigations.



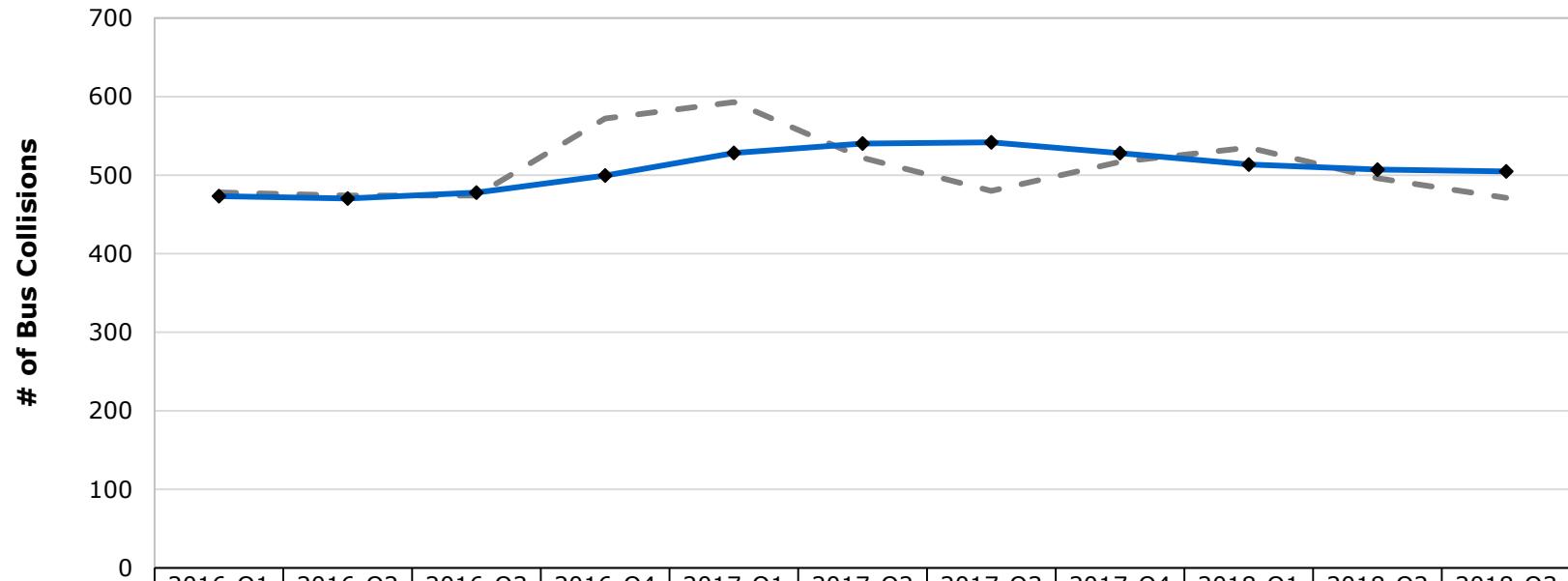
Derailment

- Central focus is on reducing human factor derailments.
- Human factors identified as probable cause in >40% of derailments.
- Common issues include:
 - Improperly setting switches
 - Failing to ensure switches are properly aligned
 - Violating a red signal aspect
- MBTA Safety issued a Safety Directive to examine and determine strategies to reduce human factor derailments.
- Due to similar concerns, the DPU is conducting an audit of the Green Line Training Program.
 - The DPU met with the Green Line Training School and will be auditing the next new hire training class.



Bus Collisions

Total Bus Collisions



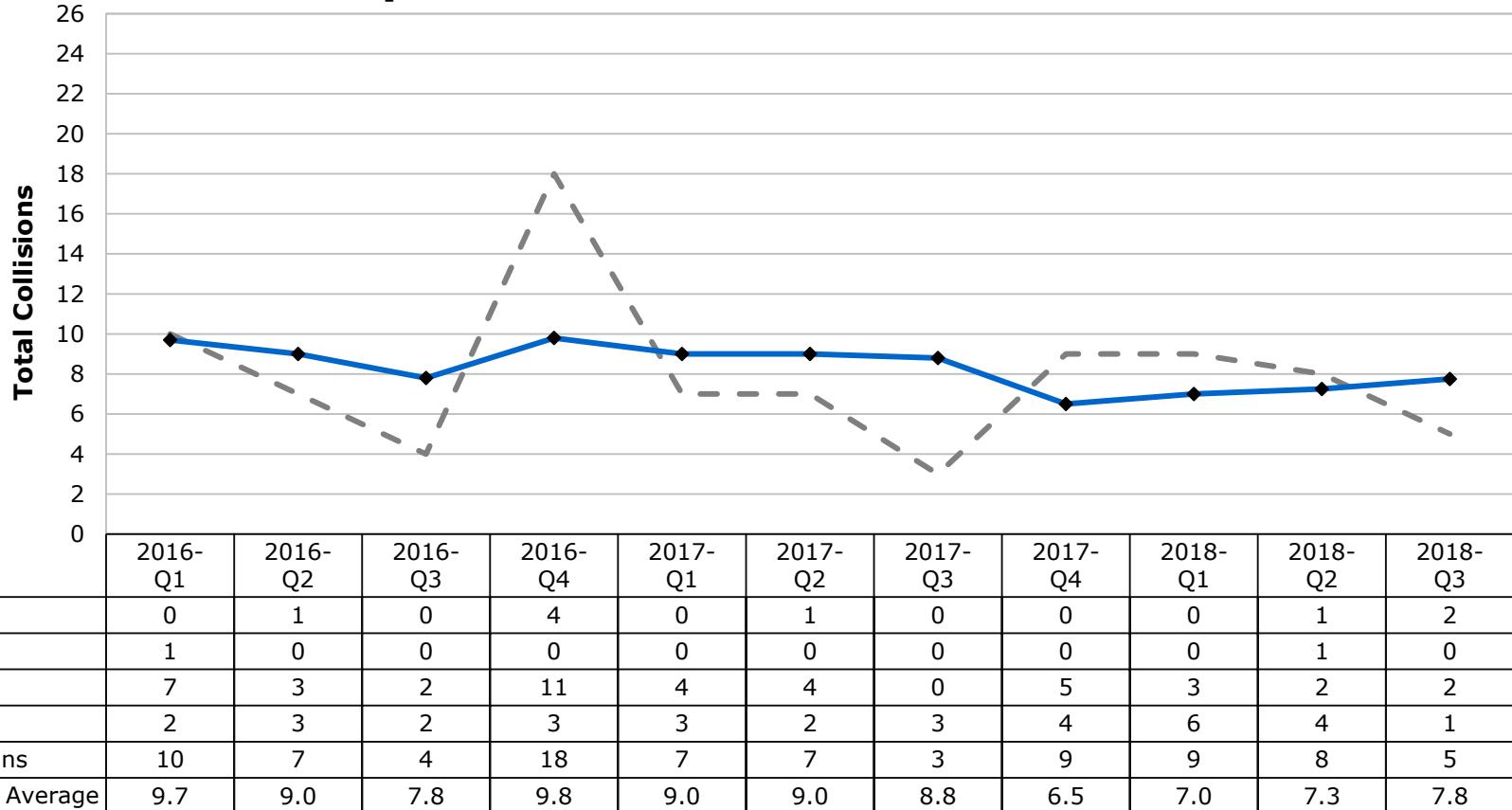
	2016-Q1	2016-Q2	2016-Q3	2016-Q4	2017-Q1	2017-Q2	2017-Q3	2017-Q4	2018-Q1	2018-Q2	2018-Q3
Bicyclist	4	7	4	6	3	5	6	5	2	4	4
Object	61	55	67	65	133	74	75	62	81	68	88
Person	11	8	5	13	15	10	4	10	7	7	5
Vehicle	402	404	398	488	442	433	395	440	445	417	374
— Total Collisions	478	474	474	572	593	522	480	517	535	496	471
— Total Rolling Average	473.3	470.3	477.8	499.5	528.3	540.3	541.8	528.0	513.5	507.0	504.8

Total Bus Collisions include all incidents where there is reported or alleged contact with a MBTA bus regardless of the collision severity.



Bus Collisions

Reportable Bus Collisions



Reportable bus collisions are collisions with a person requiring transport to a medical facility, any collision involving three or more transports for medical treatment, or any collision resulting in property damage $\geq \$50,000$.



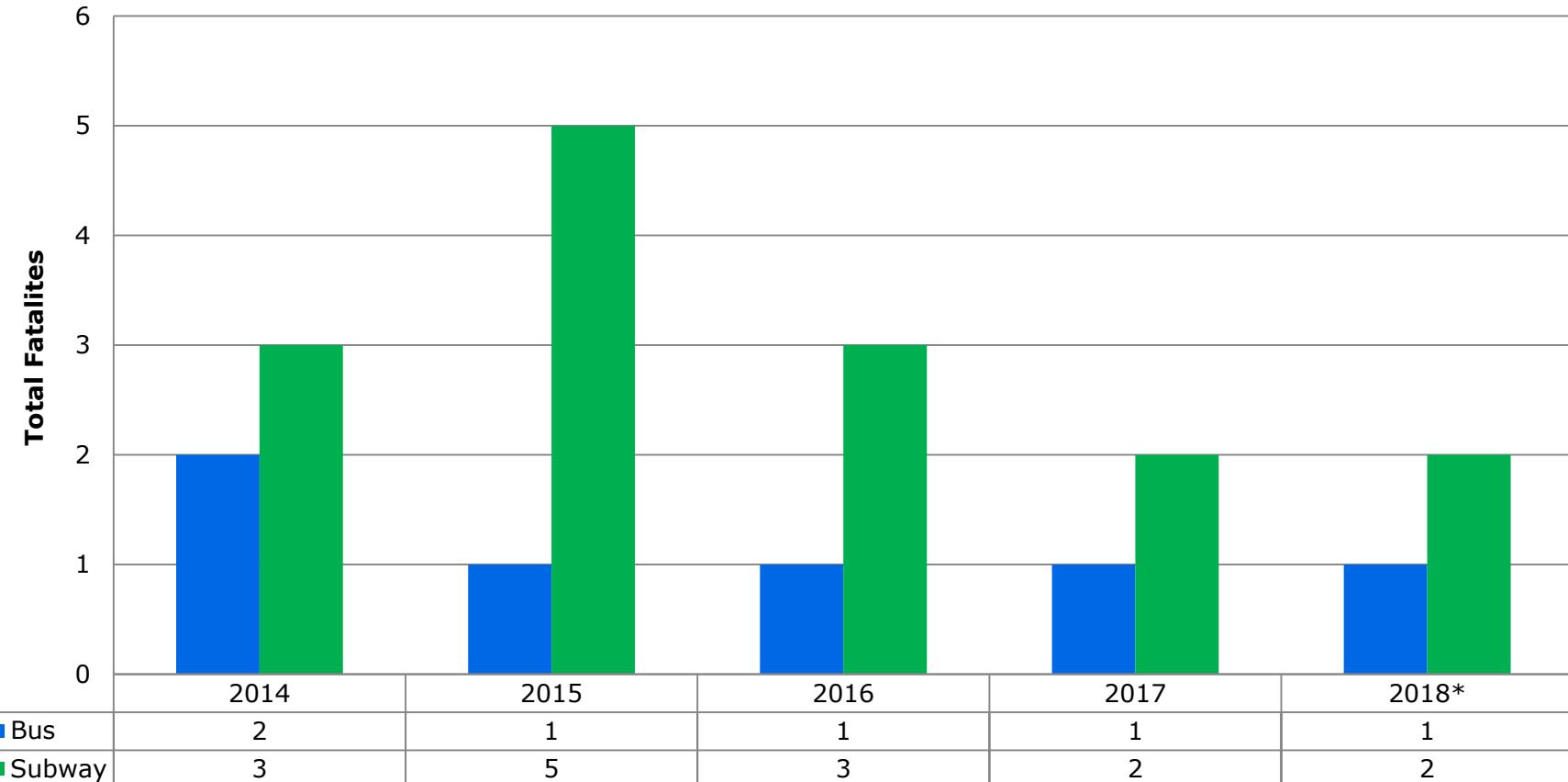
Bus Collisions

- The Bus Accident Reduction Committee continues to meet monthly to review accident and incident trending.
- MBTA Safety and Training have been conducting outreach with bus operators focused on reducing collisions and injuries.
- In July, a “Watch and Wait” Fair was held at each garage lobby to educate operators on techniques to reduce onboard injuries.
- Bus Accident Reduction Committee have also been researching the installation of a Video Based Safety System onboard buses.
- The system uses onboard data, video, and analytics to actively assess bus operator performance and create personalized driver profiles.
- Properties that have adopted similar systems report collision reductions up to 50%.



Bus & Subway Fatalities – 2014-2018

Bus and Subway Fatalities CY 2014-2018*



*2018 Totals are as of October 1, 2018

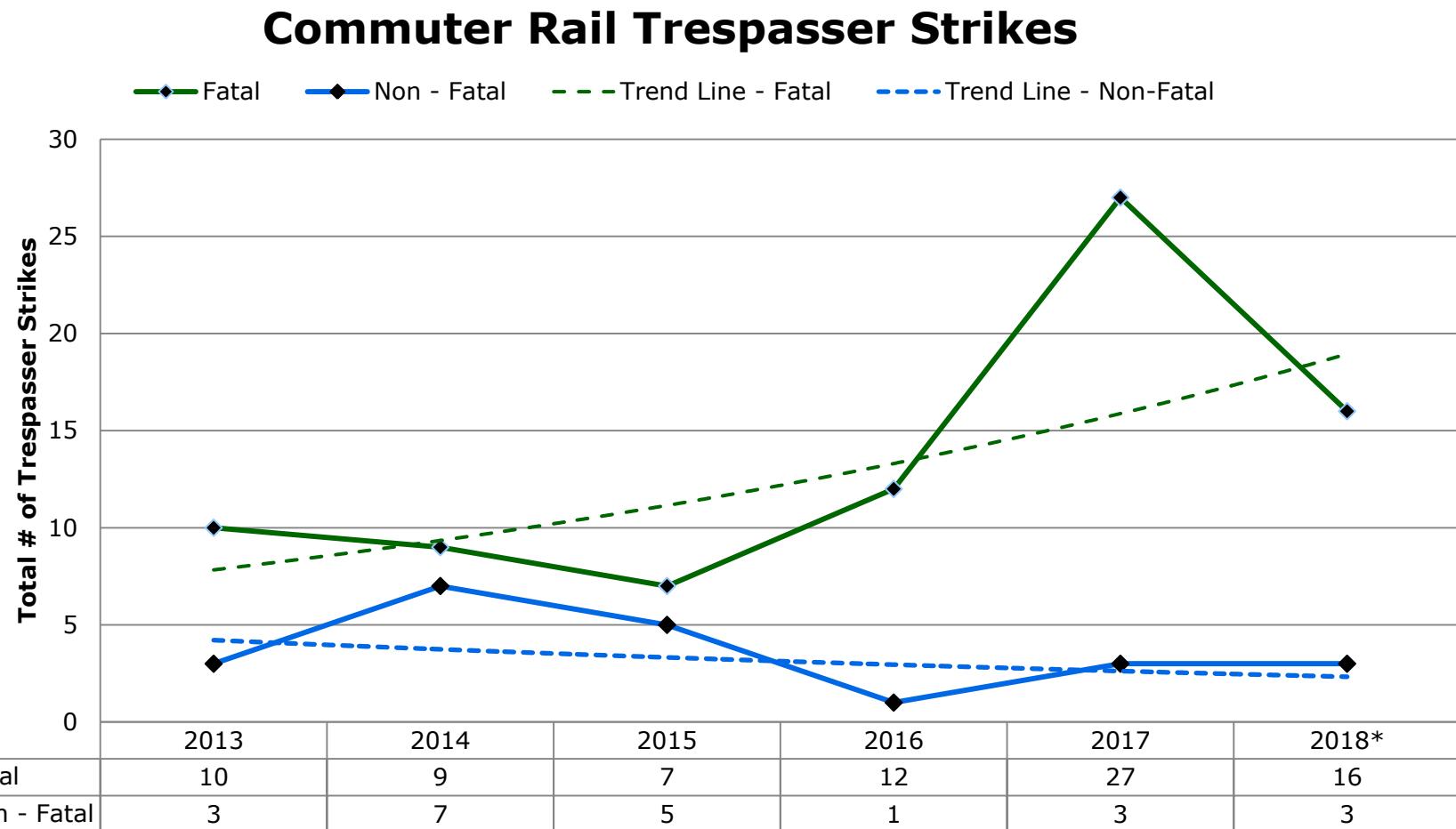


Bus & Subway Fatalities – 2014-2018

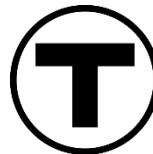
- Bus Fatalities have remained consistent since 2014.
- Subway fatalities experienced a spike in 2015, and since then the numbers have decreased each year.
- 2018 Fatalities:
 - May 13 - Bus collision in Saugus
 - An auto struck a parked vehicle and then crossed into the bus's travel lane resulting in a head-on collision.
 - The automobile operator succumbed to injuries sustained in the collision.
 - August 18 – Orange Line trespasser fatality near Green Street Station
 - Trespasser entered ROW and made contact to the 3rd Rail.
 - September 9 – Red Line trespasser strike at Porter Square Station
 - Trespasser was struck by a train after climbing into the pit area and walking into the station tunnel.



Commuter Rail Trespasser Strikes



*2018 Totals are as of October 1, 2018



Commuter Rail Trespasser Strikes

- Trespasser Strikes increased significantly in 2017 and continued on a similar pace in 2018.
- In an effort to reduce these numbers MBTA, Keolis, and Transit Police collaborated with Operation Lifesaver to conduct public outreach and raise safety awareness as part of the second national Rail Safety Week on the Week of September 23rd.

Operation Lifesaver, Inc. Schedule of Messages and Events							
DATE	Sunday 9/23	Monday 9/24	Tuesday 9/25	Wednesday 9/26	Thursday 9/27	Friday 9/28	Saturday 9/29
THEME	Lasting Impact	No Photos/ Videos on Tracks	Law Enforcement Partnerships	Trespass Prevention	Transit Safety	Crossing Safety	Community Connection
ACTIONS & EVENTS	Rail safety announcements will begin on the subway advising passengers to stay alert around train tracks, stay away from platform edges, watch your step, and when on board hold on.	Media Press Conference with MBTA General Manager, Transit Police, Railroad Operations, FRA, & Keolis at South Station. Onboard commuter outreach between Wickford Junction and South Station.	Community outreach events by Framingham, Salem, and MBTA Transit Police.	Trespass prevention outreach at identified trespassing hotspots in Fitchburg and Chelsea.	Rail Safety Teams at South Station, Downtown Crossing, Back Bay Station, and Park Street will be passing out rail education pamphlets and talking to passengers about rail safety.	Safety Officials will be handing out literature and discussing rail safety with motorists at the Union Street Grade Crossing in Holbrook.	Employee education at the MBTA 2018 Bus Roadeo.
STAKE HOLDERS	All partners.	MBTA Senior Leadership, Safety, Railroad Operations, Transit Police, FRA, and Keolis.	State, local, and Transit Police.	MBTA Safety, Railroad Operations, Transit Police, the FRA, and Keolis.	MBTA Safety and Transportation.	MBTA Safety, Railroad Operations, Transit Police, the FRA, and Keolis.	MBTA Safety and Transportation.